

## Index to Volume 154

## Alphabetical Table of Contents of Authors

*Adler, Frederick R.* The Balance of Terror: An Alternative Mechanism for Competitive Trade-Offs and Its Implications for Invading Species, 497

*Anderson, Carl, and Francis L. W. Ratnieks.* Task Partitioning in Insect Societies. I. Effect of Colony Size on Queueing Delay and Colony Ergonomic Efficiency, 521

*Anderson, Carl.* See *Ratnieks, Francis L. W.*, 536

*Baldauf, Sandra L.* A Search for the Origins of Animals and Fungi: Comparing and Combining Molecular Data, S178

*Bancroft, D. R.* See *Coltman, D. W.*, 730

*Beet, Andrew.* See *Solow, Andrew R.*, 587

*Berger, James D.* See *Katz, Laura A.*, S93

*Blows, Mark W.* See *Schwarzkopf, Lin*, 333

*Bond, William J.* See *Keely, Jon E.*, 383

*Bourke, Andrew F. G., and George L. Chan.* Queen-Worker Conflict over Sexual Production and Colony Maintenance in Perennial Social Insects, 417

*Briese, David.* See *Rees, Mark*, 628

*Brodie, Edmund D., III.* See *Clayton, Dale H.*, 261

*Brooks, Robert, and Vanessa Coulbridge.* Multiple Sexual Ornaments Coevolve with Multiple Mating Preferences, 37

*Caley, M. Julian.* See *Schwarzkopf, Lin*, 333

*Castilla, Juan Carlos.* See *Guíñez, Ricardo*, 341

*Cebrian, Just.* Patterns in the Fate of Production in Plant Communities, 449

*Chan, George L.* See *Bourke, Andrew F. G.*, 417

*Chang, Shu-Mei.* See *Rausher, Mark D.*, 242

*Chase, Jonathan M.* Food Web Effects of Prey Size Refugia: Variable Interactions and Alternative Stable Equilibria, 559

—. To Grow or to Reproduce? The Role of Life-History Plasticity in Food Web Dynamics, 571

*Clayton, Dale H., Patricia L. M. Lee, Daniel M. Tompkins, and Edmund D. Brodie III.* Reciprocal Natural Selection on Host-Parasite Phenotypes, 261

*Clutton-Brock, T. H.* See *Coltman, D. W.*, 730

*Coltman, D. W., J. A. Smith, D. R.*

*Bancroft, J., Pilkington, A. D. C. MacColl, T. H. Clutton-Brock, and J. M. Pemberton.* Density-Dependent Variation in Lifetime Breeding Success and Natural and Sexual Selection in Soay Rams, 730

*Costello, Christopher.* See *Solow, Andrew R.*, 587

*Coulbridge, Vanessa.* See *Brooks, Robert*, 37

*Cronin, James T., and Donald R. Strong.* Dispersal-Dependent Oviposition and the Aggregation of Parasitism, 23

*Delwiche, Charles F.* Tracing the Thread of Plastid Diversity through the Tapestry of Life, S164

*Dodd, Mike.* See *Silvertown, Jonathan*, 321

*Donohue, Kathleen.* Seed Dispersal as a Maternally Influenced Character: Mechanistic Basis of Maternal Effects and Selection on Maternal Characters in an Annual Plant, 674

*Engen, Steinar.* See *Lande, Russell*, 271

*Fagan, William F., Eli Meir, and Joslin L. Moore.* Variation Thresholds for Extinction and Their Implications for Conservation Strategies, 510

*Forchhammer, Mads C.* See *Post, Eric*, 194

*Ganade, Gislene, and Mark Westoby.* Seed Mass and the Evolution of Early-Seedling Etiolation, 469

*Gangestad, Steven W.* See *Thornhill, Randy*, 234

*Gavrilets, Sergey.* A Dynamical Theory of Speciation on Holey Adaptive Landscapes, 1

*Getty, Thomas.* What Do Experimental Studies Tell Us about Group Selection in Nature? 596

*Goodnight, Charles J.* See *Wade, Michael J.*, 599

*Grbic, Miodrag.* See *Ives, Anthony R.*, 652

*Gross, Kevin, and Anthony R. Ives.* Inferring Host-Parasitoid Stability from Patterns of Parasitism among Patches, 489

*Guíñez, Ricardo, and Juan Carlos Castilla.* A Tridimensional Self-Thinning Model for Multilayered Intertidal Mussels, 341

*Hansen, Thomas F., Nils C. Stenseth, and Heikki Henttonen.* Multiannual Vole Cycles and Population Regulation during Long Winters: An Analysis of Seasonal Density Dependence, 129

*Hatchwell, B. J.* Investment Strategies of Breeders in Avian Cooperative Breeding Systems, 205

*Hentschel, Brian T.* Complex Life Cycles in a Variable Environment: Predicting When the Timing of Metamorphosis Shifts from Resource Dependent to Developmentally Fixed, 549

*Henttonen, Heikki.* See *Hansen, Thomas F.*, 129

*Hill, Geoffrey E.* Is There an Immunological Cost to Carotenoid-Based Ornamental Coloration? 589

*Hughes, Josie S., and Sarah P. Otto.* Ecology and the Evolution of Biphasic Life Cycles, 306

*Huisman, Jef, Paul van Oostveen, and Franz J. Weissing.* Species Dynamics in Phytoplankton Blooms: Incomplete Mixing and Competition for Light, 46

*Hurst, Gregory D. D.* See *Jiggins, Francis M.*, 481

*Irschick, Duncan J., and Jonathan B. Losos.* Do Lizards Avoid Habitats in Which Performance is Submaximal? The Relationship between Sprinting Capabilities and Structural Habitat Use in Caribbean Anoles, 293

*Ives, Anthony R.* See *Gross, Kevin*, 489

*Ives, Anthony R., Shon S. Schooler, Victoria J. Jagar, Sarah E. Knutson, Miodrag Grbic, and William H. Settle.* Variability and Parasitoid Foraging Efficiency: A Case Study of Pea Aphids and *Aphidius ervi*, 652

*Jagar, Victoria J.* See *Ives, Anthony R.*, 652

*Jiggins, Francis M., Gregory D. D. Hurst, and Michael E. N. Majerus.* How Common Are Meiotically Driving Sex Chromosomes in Insects? 481

*Katz, Laura A., and James D. Berger.* Parade of the Little Millions, S93

*Katz, Laura A.* The Tangled Web: Gene Genealogies and the Origin of Eukaryotes, S137

*Keely, Jon E., and William J. Bond.* Mast Flowering and Semelparity in Bamboos: The Bamboo Fire Cycle Hypothesis, 383

Kimball, Rebecca T., and J. David Ligon. Evolution of Avian Plumage Dichromatism from a Proximate Perspective, 182

Kirchner, J. W., and B. A. Roy. The Evolutionary Advantages of Dying Young: Epidemiological Implications of Longevity in Metapopulations, 140

Knauer, Felix. See Wiegand, Thorsten, 605

Knuteson, Sarah E. See Ives, Anthony R., 652

Kokko, Hanna, Aulay Mackenzie, John D. Reynolds, Jan Lindström, and William J. Sutherland. Measures of Inequality Are Not Equal, 358

Krstolic, Jennifer L. See Wolfe, Lorne M., 484

Lande, Russell, Steinar Engen, and Bernt-Erik Sæther. Spatial Scale of Population Synchrony: Environmental Correlation versus Dispersal and Density Regulation, 271

Langvatn, Rolf. See Post, Eric, 194

Lee, Patricia L. M. See Clayton, Dale H., 261

Lester, Nigel. See Vander Zanden, M. Jake, 406

Ligon, J. David. See Kimball, Rebecca T., 182

Lindström, Jan. See Kokko, Hanna, 358

Lively, C. M. See Peters, A. D., 393

Loreau, Michel, and Nicolas Mouquet. Immigration and the Maintenance of Local Species Diversity, 427

Losos, Jonathan B. See Irschick, Duncan J., 293

MacColl, A. D. C. See Coltman, D. W., 730

Mackenzie, Aulay. See Kokko, Hanna, 358

Majerus, Michael E. N. See Jiggins, Francis M., 481

Mangel, Marc. See Rees, Mark, 628

Marschall, Elizabeth A. See Mauck, R. A., 99

Martin, Andrew P. Increasing Genomic Complexity by Gene Duplication and the Origin of Vertebrates, 111

Mauck, R. A., Elizabeth A. Marschall, and Patricia G. Parker. Adult Survival and Imperfect Assessment of Parentage: Effects on Male Parenting Decisions, 99

Mazalov, Vladimir. See Perrin, Nicolas, 282

McGlynn, Terrence P. Non-native Ants Are Smaller than Related Native Ants, 690

Meir, Eli. See Fagan, William F., 510

Møller, Anders Pape. See Saino, Nicola, 441

Møller, Anders P. See Thornhill, Randy, 234

Moloney, Kirk A. See Wiegand, Thorsten, 605

Mooers, Arne Ø., Steven M. Vamosi, and Dolph Schlüter. Using Phylogenies to Test Macroevolutionary Hypotheses of Trait Evolution in Cranes (Gruinae), 249

Moore, Joslin L. See Fagan, William F., 510

Mouquet, Nicolas. See Loreau, Michel, 427

Naves, Javier. See Wiegand, Thorsten, 605

Ninni, Paola. See Saino, Nicola, 441

Otto, Sarah P. See Hughes, Josie S., 306

Palmer, A. Richard. Detecting Publication Bias in Meta-analyses: A Case Study of Fluctuating Asymmetry and Sexual Selection, 220

Parker, Patricia G. See Mauck, R. A., 99

Patterson, David J. The Diversity of Eukaryotes, 596

Pemberton, J. M. See Coltman, D. W., 730

Perrin, Nicolas, and Vladimir Mazalov. Dispersal and Inbreeding Avoidance, 282

Peters, A. D., and C. M. Lively. The Red Queen and Fluctuating Epistasis: A Population Genetic Analysis of Antagonistic Coevolution, 393

Pilkington, J. See Coltman, D. W., 730

Pini, Elena. See Saino, Nicola, 441

Post, Eric, Mads C. Forchhammer, Nils C. Stenseth, and Rolf Langvatn. Extrinsic Modification of Vertebrate Sex Ratios by Climatic Variation, 194

Proulx, Stephen R. Matings Systems and the Evolution of Niche Breadth, 89

Qian, Hong, and Robert E. Ricklefs. A Comparison of the Taxonomic Richness of Vascular Plants in China and the United States, 160

Rasmussen, Joseph B. See Vander Zanden, M. Jake, 406

Ratnieks, Francis L. W. See Anderson, Carl, 521

Ratnieks, Francis L. W., and Carl Anderson. Task Partitioning in Insect Societies. II. Use of Queueing Delay Information in Recruitment, 536

Rausher, Mark D., and Shu-Mei Chang. Stabilization of Mixed-Mating Systems by Differences in the Magnitude of Inbreeding Depression for Male and Female Fitness Components, 242

Rausher, Mark D. See Tiffin, Peter, 700

Rees, Mark, Andy Sheppard, David Brieze, and Marc Mangel. Evolution of Size-Dependent Flowering in *Onopordum illyricum*: A Quantitative Assessment of the Role of Stochastic Selection Pressures, 628

Reynolds, John D. See Kokko, Hanna, 358

Ricklefs, Robert E. See Qian, Hong, 160

Robinson, Scott K. See Webster, Michael S., 717

Roger, Andrew J. Reconstructing Early Events in Eukaryotic Evolution, S146

Roy, B. A. See Kirchner, J. W., 140

Sabelis, Maurice W. See van Baalen, Minus, 69

Sæther, Bernt-Erik. See Lande, Russell, 271

Saino, Nicola, Riccardo Stradi, Paola Ninni, Elena Pini, and Anders Pape Møller. Carotenoid Plasma Concentration, Immune Profile, and Plumage Ornamentation of Male Barn Swallows (*Hirundo rustica*), 441

Schlüter, Dolph. See Mooers, Arne Ø., 249

Schooler, Shon S. See Ives, Anthony R., 652

Schwarzkopf, Lin, Mark W. Blows, and M. Julian Caley. Life-History Consequences of Divergent Selection on Egg Size in *Drosophila melanogaster*, 333

Settle, William H. See Ives, Anthony R., 652

Sheppard, Andy. See Rees, Mark, 628

Shuter, Brian J. See Vander Zanden, M. Jake, 406

Silvertown, Jonathan, and Mike Dodd. The Demographic Cost of Reproduction and Its Consequences in Balsam Fir (*Abies balsamea*), 321

Smith, J. A. See Coltman, D. W., 730

Solow, Andrew R., Christopher Costello, and Andrew Beet. On an Early Result on Stability and Complexity, 587

Stenseth, Nils C. See Hansen, Thomas F., 129

———. See Post, Eric, 194

Stevens, Lori. See Wade, Michael J., 599

Stradi, Riccardo. See Saino, Nicola, 441

Strong, Donald R. See Cronin, James T., 23

Sutherland, William J. See Kokko, Hanna, 358

Taylor, F. J. R. "Max". Ultrastructure as a Control for Protistan Molecular Phylogeny, S125

Thornhill, Randy, Anders P. Møller, and Steven W. Gangestad. The Biological Significance of Fluctuating Asymmetry and Sexual Selection: A Reply to Palmer, 234

Tiffin, Peter, and Mark D. Rausher. Genetic Constraints and Selection Acting on Tolerance to Herbivory in the Common Morning Glory *Ipomoea purpurea*, 700

Tompkins, Daniel M. See Clayton, Dale H., 261

Vamosi, Steven M. See Mooers, Arne Ø., 249

*van Baalen, Minus, and Maurice W. Sabelis.* Nonequilibrium Population Dynamics of "Ideal and Free" Prey and Predators, 69

*Vander Zanden, M. Jake, Brian J. Shuter, Nigel Lester, and Joseph B. Rasmussen.* Patterns of Food Chain Length in Lakes: A Stable Isotope Study, 406

*van Oostveen, Paul.* See *Huisman, Jef*, 46

*Wade, Michael J., Charles J. Goodnight, and Lori Stevens.* Design and Interpretation of Experimental Studies of Interdemic Selection: A Reply to Getty, 599

*Webster, Michael S., and Scott K. Robinson.* Courtship Disruptions and Male Mating Strategies: Examples from Female-Defense Mating Systems, 717

*Weissing, Franz J.* See *Huisman, Jef*, 46

*Westoby, Mark.* See *Ganade, Gislene*, 469

*Wiegand, Thorsten, Kirk A. Moloney, Javier Naves, and Felix Knauer.* Finding the Missing Link between Landscape Structure and Population Dynamics: A Spatially Explicit Perspective, 605

*Wolfe, Lorne M., and Jennifer L. Krstolic.* Floral Symmetry and Its Influence on Variance in Flower Size, 484

### Alphabetical Table of Contents of Titles

Adaptation, Exaptation, and Constraint: A Hormonal Perspective. Ellen D. Ketterson and Val Nolan, Jr., S4.

Adult Survival and Imperfect Assessment of Parentage: Effects on Male Parenting Decisions. R. A. Mauck, Elizabeth A. Marschall, and Patricia G. Parker, 99.

The Balance of Terror: An Alternative Mechanism for Competitive Trade-Offs and Its Implications for Invading Species. Frederick R. Adler, 497.

The Biological Significance of Fluctuating Asymmetry and Sexual Selection: A Reply to Palmer. Randy Thornhill, Anders P. Møller, and Steven W. Gangestad, 234.

Carotenoid Plasma Concentration, Immune Profile, and Plumage Ornamentation of Male Barn Swallows (*Hirundo rustica*). Nicola Saino, Riccardo Stradi, Paola Ninni, Elena Pini, and Anders Pape Møller, 441.

A Comparison of the Taxonomic Richness of Vascular Plants in China and the United States. Hong Qian and Robert E. Ricklefs, 160.

Complex Life Cycles in a Variable Environment: Predicting When the Timing of Metamorphosis Shifts from Resource Dependent to Developmentally Fixed. Brian T. Hentschel, 549.

Courtship Disruptions and Male Mating Strategies: Examples from Female-Defense Mating Systems. Michael S. Webster and Scott K. Robinson, 717.

The Demographic Cost of Reproduction and Its Consequences in Balsam Fir (*Abies balsamea*). Jonathan Silvertown and Mike Dodd, 321.

Density-Dependent Variation in Lifetime Breeding Success and Natural and Sexual Selection in Soay Rams. D. W. Coltman, J. A. Smith, D. R. Bancroft, J. Pilkington, A. D. C. MacColl, T. H. Clutton-Brock, and J. M. Pemberton, 730.

Design and Interpretation of Experimental Studies of Interdemic Selection: A Reply to Getty. Michael J. Wade, Charles J. Goodnight, and Lori Stevens, 599.

Detecting Publication Bias in Meta-analyses: A Case Study of Fluctuating Asymmetry and Sexual Selection. A. Richard Palmer, 220.

Dispersal and Inbreeding Avoidance. Nicolas Perrin and Vladimir Mazalov, 282.

Dispersal-Dependent Oviposition and the Aggregation of Parasitism. James T. Cronin and Donald R. Strong, 23.

The Diversity of Eukaryotes. David J. Patterson, S96.

Do Lizards Avoid Habitats in Which Performance Is Submaximal? The Relationship between Sprinting Capabilities and Structural Habitat Use in Caribbean Anoles. Duncan J. Irschick and Jonathan B. Losos, 293.

A Dynamical Theory of Speciation on Holey Adaptive Landscapes. Sergey Gavrilets, 1.

Ecology and the Evolution of Biphasic Life Cycles. Josie S. Hughes and Sarah P. Otto, 306.

Engineering Candidate Genes in Studies of Adaptation: The Heat-Shock Protein Hsp70 in *Drosophila melanogaster*. Martin E. Feder, S55.

Evolution of Avian Plumage Dichromatism from a Proximate Perspective. Rebecca T. Kimball and J. David Ligon, 182.

Evolution of Size-Dependent Flowering in *Onopordum illyricum*: A Quantitative Assessment of the Role of Stochastic Selection Pressures. Mark Rees, Andy Sheppard, David Brieze, and Marc Mangel, 628.

The Evolutionary Advantages of Dying Young: Epidemiological Implications of Longevity in Metapopulations. J. W. Kirchner and B. A. Roy, 140.

Exploring the Physiological Basis of Costs of Herbicide Resistance in *Arabidopsis thaliana*. Colin B. Purrington and Joy Bergelson, S82.

Extrinsic Modification of Vertebrate Sex Ratios by Climatic Variation. Eric Post, Mads C. Forchhammer, Nils C. Stenseth, and Rolf Langvatn, 194.

Finding the Missing Link between Landscape Structure and Population Dynamics: A Spatially Explicit Perspective. Thorsten Wiegand, Kirk A. Moloney, Javier Naves, and Felix Knauer, 605.

Floral Symmetry and Its Influence on Variance in Flower Size. Lorne M. Wolfe and Jennifer L. Krstolic, 484.

Food Web Effects of Prey Size Refugia: Variable Interactions and Alternative Stable Equilibria. Jonathan M. Chase, 559.

Genetic Constraints and Selection Acting on Tolerance to Herbivory in the Common Morning Glory *Ipomoea purpurea*. Peter Tiffin and Mark D. Rausher, 700.

How Common Are Meiotically Driving Sex Chromosomes in Insects? Francis M. Jiggins, Gregory D. D. Hurst, and Michael E. N. Majerus, 481.

Immigration and the Maintenance of Local Species Diversity. Michel Loreau and Nicolas Mouquet, 427.

Increasing Genomic Complexity by Gene Duplication and the Origin of Vertebrates. Andrew P. Martin, 111.

Inferring Host-Parasitoid Stability from Patterns of Parasitism among Patches. Kevin Gross and Anthony R. Ives, 489.

Introduction: Experimental Approaches to

Testing Adaptation. Johanna Schmitt, S1.

Investment Strategies of Breeders in Avian Cooperative Breeding Systems. B. J. Hatchwell, 205.

Is There an Immunological Cost to Carotenoid-Based Ornamental Coloration? Geoffrey E. Hill, 589.

Life-History Consequences of Divergent Selection on Egg Size in *Drosophila melanogaster*. Lin Schwarzkopf, Mark W. Blows, and M. Julian Caley, 333.

Manipulative Approaches to Testing Adaptive Plasticity: Phytochrome-Mediated Shade-Avoidance Responses in Plants. Johanna Schmitt, Susan A. Dudley, and Massimo Pigliucci, 543.

Mast Flowering and Semelparity in Bamboos: The Bamboo Fire Cycle Hypothesis. Jon E. Keeley and William J. Bond, 383.

Matings Systems and the Evolution of Niche Breadth. Stephen R. Proulx, 89.

Measures of Inequality Are Not Equal. Hanna Kokko, Aulay Mackenzie, John D. Reynolds, Jan Lindström, and William J. Sutherland, 358.

Mechanistic Analysis of Natural Selection and a Refinement of Lack's and Williams's Principles. Barry Sinervo, S26.

Multiannual Vole Cycles and Population Regulation during Long Winters: An Analysis of Seasonal Density Dependence. Thomas F. Hansen, Nils C. Stenseth, and Heikki Henttonen, 129.

Multiple Sexual Ornaments Coevolve with Multiple Mating Preferences. Robert Brooks and Vanessa Coulbridge, 37.

Nonequilibrium Population Dynamics of "Ideal and Free" Prey and Predators. Minus van Baalen and Maurice W. Sabelis, 69.

Non-native Ants Are Smaller than Related Native Ants. Terrence P. McGlynn, 690.

On an Early Result on Stability and Complexity. Andrew R. Solow,

Christopher Costello, and Andrew Beet, 587.

Parade of the Little Millions. Laura A. Katz and James D. Berger, S93.

Patterns in the Fate of Production in Plant Communities. Just Cebrian, 449.

Patterns of Food Chain Length in Lakes: A Stable Isotope Study. M. Jake Vander Zanden, Brian J. Shuter, Nigel Lester, and Joseph B. Rasmussen, 406.

Queen-Worker Conflict over Sexual Production and Colony Maintenance in Perennial Social Insects. Andrew F. G. Bourke and George L. Chan, 417.

Reciprocal Natural Selection on Host-Parasite Phenotypes. Dale H. Clayton, Patricia L. M. Lee, Daniel M. Tompkins, and Edmund D. Brodie III, 261.

Reconstructing Early Events in Eukaryotic Evolution. Andrew J. Roger, S146.

The Red Queen and Fluctuating Epistasis: A Population Genetic Analysis of Antagonistic Coevolution. A. D. Peters and C. M. Lively, 393.

A Search for the Origins of Animals and Fungi: Comparing and Combining Molecular Data. Sandra L. Baldauf, S178.

Seed Dispersal as a Maternally Influenced Character: Mechanistic Basis of Maternal Effects and Selection on Maternal Characters in an Annual Plant. Kathleen Donohue, 674.

Seed Mass and the Evolution of Early-Seedling Etiolation. Gislene Ganade and Mark Westoby, 469.

Spatial Scale of Population Synchrony: Environmental Correlation versus Dispersal and Density Regulation. Russell Lande, Steinar Engen, and Bernt-Erik Sæther, 271.

Species Dynamics in Phytoplankton Blooms: Incomplete Mixing and Competition for Light. Jef Huisman, Paul van Oostveen, and Franz J. Weissing, 46.

Stabilization of Mixed-Mating Systems by Differences in the Magnitude of Inbreeding Depression for Male and Female Fitness Components. Mark D. Rausher and Shu-Mei Chang, 242.

The Tangled Web: Gene Genealogies and the Origin of Eukaryotes. Laura A. Katz, S137.

Task Partitioning in Insect Societies. I. Effect of Colony Size on Queueing Delay and Colony Ergonomic Efficiency. Carl Anderson and Francis L. W. Ratnieks, 521.

Task Partitioning in Insect Societies. II. Use of Queueing Delay Information in Recruitment. Francis L. W. Ratnieks and Carl Anderson, 536.

To Grow or to Reproduce? The Role of Life-History Plasticity in Food Web Dynamics. Jonathan M. Chase, 571.

Tracing the Thread of Plastid Diversity through the Tapestry of Life. Charles F. Delwiche, S164.

Transgenes in the Analysis of Life Span and Fitness. Marc Tatar, S67.

A Tridimensional Self-Thinning Model for Multilayered Intertidal Mussels. Ricardo Guiñez and Juan Carlos Castilla, 341.

Ultrastructure as a Control for Protistan Molecular Phylogeny. F. J. R. "Max" Taylor, S125.

Using Phylogenies to Test Macroevolutionary Hypotheses of Trait Evolution in Cranes (Gruinae). Arne Ø. Mooers, Steven M. Vamosi, and Dolph Schlüter, 249.

Variability and Parasitoid Foraging Efficiency: A Case Study of Pea Aphids and *Aphidius ervi*. Anthony R. Ives, Shon S. Schooler, Victoria J. Jagar, Sarah E. Knuteson, Miodrag Grbic, and William H. Settle, 652.

Variation Thresholds for Extinction and Their Implications for Conservation Strategies. William F. Fagan, Eli Meir, and Joslin L. Moore, 510.

What Do Experimental Studies Tell Us about Group Selection in Nature? Thomas Getty, 596.

#### Alphabetical Table of Keywords

*Abies balsamea*, 321  
 adult survival, 99  
 aggregation, 23, 69  
 aggregation of risk, 489  
 alternation of generations, 306  
 alternative equilibria, 571  
 alternative stable equilibria, 559  
 Alveolata, S125  
 amitochondriate protist, S146

apicomplexa, S164  
 artificial selection, 333

bamboo, 383  
 biogeography, 160  
 birds, 261  
 bivariate time-series analysis, 129  
 body size, 690

carbon storage, 449  
 carotenoid, 589  
*Cervus elaphus*, 194  
 chimerism, S137  
 China, 160  
 chloroplast, S164  
*Clethrionomys rufocanarius*, 129  
 coevolution, 69, 261, 393  
 colony size, 521  
 combining data, S178  
 comparative, 293  
 comparative approach, 484  
 compartmentalization, 587  
 competition, 497  
 competition for space, 427  
 competition model, 46  
 complex life cycle, 549  
 connectance, 587  
 cooperative breeding, 205  
 copulation disruptions, 717  
 cost of reproduction, 321  
 costs, 700, S82  
 critical depth, 46  
 critical turbulence, 46

dark-eyed junco, S4  
 decomposition, 449  
 defense, 497  
 delayed reproduction, 383, 628  
 density regulation, 271  
 developmental stability, 220, 234  
 diploidy, 306  
 Diptera, 481  
 dispersal, 271, 674  
 dispersal distance, 23  
 diversity, 160  
*Drosophila*, S55  
*Drosophila melanogaster*, 333, S67  
 dynamic programming, 99  
 dynamic state variable model, 628

early eukaryote evolution, S146  
 ecosystem processes, 427  
 ectoparasites, 261  
 effective population size, 730  
 egg size, 333  
 elongation factor-1 $\alpha$ , S178  
 endocrine, 182  
 endosymbiosis, S146, S164  
 environment, 194  
 environmental stochasticity, 271  
 epistasis, 393

ergonomics, 521, 536  
 etiolation, 469  
 eukaryote crown, S178  
 eukaryotes, S93, S96  
 evolution, 1, 89, 182, 596  
 evolutionarily stable strategy, 69, 282  
 evolutionary protistology, S96  
 exotic species, 690  
 extended in-group, S96  
 extinction risk, 510  
 extrapair fertilizations, 99

facultative polygyny, 417  
 fecundity, 333  
 female-defense polygyny, 717  
 fighting, 690  
 fir wave, 321  
 fitness, 194, 261  
 floral symmetry, 484  
 flour beetles, 599  
 flower size, 484  
 fluctuating asymmetry, 234  
 fluctuating selection, 393  
 food chains, 406  
 food driven, 341  
 food webs, 406, 559, 571, 587  
 foraging behavior, 69, 469  
 Formicidae, 417  
 founder effects, 140  
 fuels, 383  
 funnel graph, 220

gene duplication, 111  
 gene families, 111  
 genetic algorithm, 628  
 genetic engineering, S55  
 genetic manipulation, S43  
 genetic variation, 730  
 genome duplication, 111  
*Gracilaria*, 306  
 gray-sided vole, 129  
 group selection, 140, 596, 599  
*Gruinae*, 249  
 guppies, 37

habitat connectivity, 605  
 habitat use, 293  
 haploidy, 306  
 hard selection, 599  
 heat-shock protein, S55  
 herbivory, 449, 700  
 heterogeneous landscapes, 605  
 historical factors, 160  
 holey adaptive landscapes, 1  
 honeybee, 521, 536  
 host-parasitoid interactions, 23, 489, 652  
 hsp70, S55, S67

Icteridae, 717  
 immigration, 427  
 immune system, 589

immunity, 441  
 immunoglobulins, 441  
 inbreeding depression, 242  
 indirect selection, 37  
 individual-based model, 628  
 information, 536  
 interdemic selection, 599  
 intraspecific competition, 341  
 invading species, 497  
 invasive species, 690  
 investigator effects, 220  
*Ipomoea purpurea*, 700

*Junco hyemalis*, S4

kin conflict, 417  
 kin selection, 599

Lanchester's laws, 690  
 large-scale experiments, 23  
 leks, 358  
 leukocytes, 441  
 lice, 261  
 life history, 99, 333, 417  
 life-history evolution, 140, 321  
 life-history plasticity, 571  
 life-history trade-off, S26  
 life span, 140  
 linkage disequilibrium, 393  
 long-tailed tit, 205

macroevolution, 249  
 mast flowering, 383  
 mate choice, 37  
 maternal effects, 194, 674  
 maternal environmental effects, 674  
 mathematical models, 1  
 mating behavior, 220  
 mating preferences, 37  
 mating strategies, 717  
 mating system, 730  
 mating systems, 89, 242, 282  
 meiotic drive, 481  
 meta-analysis, 234  
 metamorphosis, 549  
 microtine, 129  
 mitochondria, S125, S146  
 model, 427  
 molecular phylogeny, S125, S178  
 molt, 182  
 monocarpic, 383  
 monocarpic perennial, 628  
 Moran effect, 271  
 multilevel selection, 596  
 multiple gene genealogies, S137  
 multiple ornaments, 37  
 mussel, 341

natural selection, S26, S43  
 niche breadth, 89

optimal investment, 205  
 origin of eukaryotes, S137  
 ornament, 589  
 oviposition behavior, 23  
*Ovis aries*, 730

parasitoid aggregation, 489, 652  
 parasitoid foraging behavior, 652  
 parentage, 99  
 parental care, 205  
 patchy environments, 140  
 paternity, 730  
 performance, 293  
 phenotypic engineering, S4  
 phenotypic manipulation, S26, S43  
 phenotypic plasticity, 549  
 phenotypic selection, 674  
 phenotypic variance, 484  
 photomorphogenesis, S43  
 photoreceptor, S43  
 phylogeny, 249, 293, S93, S146, S164  
 physiology, S26  
 plant community, 427, 449  
 plant demography, 321  
 plasticity, 674  
 plastid, S164  
 plumage, 182  
 pollinator specialization, 484  
 polygyny, 282  
 polymorphism, S82  
 population dynamics, 46, 489, 605  
 population fluctuations, 129  
 predator-prey interactions, 69  
 primary production, 449  
 process error, 510  
 productive space, 406  
 productivity, 406, 559  
 protist diversity, S96  
 protist evolution, S125  
 protists, S93  
 protozoa, S93, S96

quantitative genetics, 333  
 queueing delays, 521, 536

reaction-diffusion equation, 46  
 recombination, 393  
 Red Queen, 393  
 reproductive skew, 358  
 reproductive success, 730  
 resistance, 700, S82  
 resource acquisition, 358  
 resource allocation, 417  
 resource competition, 46  
 resource variability, 549  
 review, S178  
 rocky shore, 341  
 rodent community, 129  
 rubisco, S164

sampling error, 358  
 scale-dependent landscape indices, 605  
 scaling, 341  
 seasonality, 129  
 seed dispersal, 674  
 seedling recruitment, 383  
 seedling strategy, 469  
 seed mass, 469  
 selective reporting, 220  
 self-thinning, 321, 341  
 selfing rates, 242  
 senescence, 140, S67  
 sex-biased dispersal, 282  
 sex chromosome, 481  
 sex ratio, 481  
 sex ratio evolution, 194  
 sexual dichromatism, 182  
 sexual selection, 37, 89, 234, 441, 589  
 sexual signaling, 220  
 shade, 469  
 shifting balance, 596  
 signaling, 441  
 size refugia, 559, 571  
 slime molds, S178  
 snails, 571  
 social insect, 417  
 social insects, 521, 536  
 source-sink dynamics, 605  
 space driven, 341

spatially explicit population models, 605  
 spatial population dynamics, 23  
 spatial scale, 271  
 speciation, 1, 249  
 species diversity, 427  
 sprinting, 293  
 stability, 489  
 stability probability, 587  
 statistical methods, 220  
 statistical power, 358  
 stochastic population models, 510  
 stress, S55  
 superoxide dismutase, S67  
 synchrony, 271  
 syndrome, 469

task partitioning, 521, 536  
 testosterone, S4  
 thermotolerance, S55  
 tolerance, 700  
 trade-offs, 333, 497, S4, S82  
 tramp ants, 690  
 transgenes, S67, S82  
 tree of life, S137  
 trophic position, 406  
 trophic structure, 406

ultrastructure, S125  
 uncertainty, 99  
 United States, 160

variance in fitness, 358  
 vascular plants, 160  
 vertebrates, 111  
 virulence, 261  
 vole cycles, 129  
 von Bertalanffy equation, 628

Wilbur-Collins model, 549  
 wildfire, 383

zygomorphy, 484

